

CRF Errors Corrected by the STIC Systems Branch

OIFE

Serial Number: 09/929918

CRF Processing Date: 09/19/2001
 Edited by: MMH
 Verified by: _____ (STIC sta:

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line. **ENTERED** # 2
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☒ Other: Field 223 exceed 4 lines. Edited word
processing return margins to meet the 4 line
maximum.

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

OIPE

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:43

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

```

1 <110> APPLICANT: Kordyum, Vitaliy A.
2   Chernykh, Svitlana I.
3   Slavchenko, Iryna Yu.
4   Vozianov, Oleksandr
5 <120> TITLE OF INVENTION: PHAGE-DEPENDENT SUPER PRODUCTION OF
6   BIOLOGICALLY ACTIVE PROTEIN AND PEPTIDES
7 <130> FILE REFERENCE: PHAGE.006A
8 <140> CURRENT APPLICATION NUMBER: US/09/929,918
9 <141> CURRENT FILING DATE: 2001-08-15
10 <150> PRIOR APPLICATION NUMBER: 09/318,288
11 <151> PRIOR FILING DATE: 1999-05-25
12 <160> NUMBER OF SEQ ID NOS: 11
13 <170> SOFTWARE: FastSEQ for Windows Version 4.0
15 <210> SEQ ID NO: 1
16 <211> LENGTH: 630
17 <212> TYPE: DNA
18 <213> ORGANISM: Artificial Sequence
19 <220> FEATURE:
20 <223> OTHER INFORMATION: This sequence was chemically synthesized based
21   upon the amino acid sequence of human acidic
22   fibroblast growth factor (155 amino acids) using
23   codons which are used in highly expressed proteins from E. coli.
24 <221> NAME/KEY: CDS
25 <222> LOCATION: (122)...(590)
26 <400> SEQUENCE: 1
27   gcgtagagga tcgagatctc gatcccgcca aattaatacg actcactata ggggaattgt 60
28   gagcggataa caattccoct ctagaaataa ttttgtttaa cttaagaag gagatataca 120
29   t atg gct gaa ggg gaa atc acc acc ttt aca gcg tta acg gag aaa ttt 169
30   Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe
31       1           5           10           15
32   aac ctt ccg ccc ggg aat tac aaa aaa ccc aag ctt ctt tac tgc agt 217
33   Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser
34           20           25           30
35   aac gga gga cac ttc ctg cga att ctg cca gat ggc aca gta gat ggg 265
36   Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly
37           35           40           45
38   act cgc gat cgc tcc gac cag cac att cag ctg caa ctc tcg gcc gaa 313
39   Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu
40           50           55           60
41   agc gtt gga gag gtc tat atc aag tcg acg gag act ggc cag tac ctt 361
42   Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu
43           65           70           75           80
44   gcc atg gac acc gat ggg ctt ctg tat ggc tca cag acg cct aac gaa 409
45   Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
46           85           90           95
47   gaa tgc ttg ttt cta gaa aga cta gaa gaa aac cat tac aac acg tac 457
48   Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:43

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

```

49          100          105          110
50  ata tcg aaa aaa cat gca gag aag aac tgg ttt gta ggc ctt aaa aaa 505
51  ile ser lys lys his ala glu lys asn trp phe val gly leu lys lys
52          115          120          125
53  aat ggt tcc tgt aag cgt gga cca cgg act cac tat ggc caa aag gct 553
54  asn gly ser cys lys arg gly pro arg thr his tyr gly gln lys ala
55          130          135          140
56  atc ttg ttc ctg cca cta cca gtg agc tcc gac taa g gatccgaatt 600
57  ile leu phe leu pro leu pro val ser ser asp *
58          145          150          155
59  cgagctccgt cgacaagctt gcggccgcac 630
61 <210> SEQ ID NO: 2
62 <211> LENGTH: 155
63 <212> TYPE: PRT
64 <213> ORGANISM: Homo sapiens
65 <400> SEQUENCE: 2
66  Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe
67      1          5          10          15
68  Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser
69      20          25          30
70  Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly
71      35          40          45
72  Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu
73      50          55          60
74  Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu
75      65          70          75          80
76  Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
77      85          90          95
78  Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
79      100          105          110
80  ile ser lys lys his ala glu lys asn trp phe val gly leu lys lys
81      115          120          125
82  Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala
83      130          135          140
84  ile leu phe leu pro leu pro val ser ser asp
85      145          150          155
87 <210> SEQ ID NO: 3
88 <211> LENGTH: 468
89 <212> TYPE: DNA
90 <213> ORGANISM: Homo sapiens
91 <400> SEQUENCE: 3
92  atggctgaag gggaaatcac caccttcaca gccctgaccg agaagtttaa tctgcctcca 60
93  gggaattaca agaagcccaa actcctctac tgtagcaacg ggggccactt cctgaggatc 120
94  cttccggatg gcacagtgga tgggacaagg gacaggagcg accagcacat tcagctgcag 180
95  ctcaagtgcg aaagcgtggg ggaggtgtat ataaagagta ccgagactgg ccagtacttg 240
96  gccatggaca ccgacgggct ttatcacggc tcacagacac caaatgagga atgtttgttc 300
97  ctggaaaggc tggaggagaa ccattacaac acctatatat ccaagaagca tgcagagaag 360
98  aattggtttg ttggcctcaa gaagaatggg agctgcaaac gcggtcctcg gactcactat 420
99  ggccagaaag caatcttggt tctccccctg ccagtctctt ctgattaa 468

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:43

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

```

101 <210> SEQ ID NO: 4
102 <211> LENGTH: 630
103 <212> TYPE: DNA
104 <213> ORGANISM: Artificial Sequence
105 <220> FEATURE:
106 <223> OTHER INFORMATION: This sequence is a chemically synthesized sequence
107 encoding a 134 amino acid form of fibroblast
108 growth factor with alterations for preferred codon
109 usage in E. coli
110 <221> NAME/KEY: CDS
111 <222> LOCATION: (122)...(526)
112 <400> SEQUENCE: 4
113 gcgtagagga tgcgagatctc gatcccgcgga aattaatacg actcactata ggggaattgt 60
114 gagcgggataa caattccctt ctagaaataa ttttgtttta ctttaagaag gagatataca 120
115 t atg aat tac aaa aaa ccc aag ctt ctt tac tgc agt aac gga gga cac 169
116 Met Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser Asn Gly Gly His
117 1 5 10 15
118 ttc ctg cga att ctg cca gat ggc aca gta gat ggg act cgc gat cgc 217
119 Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly Thr Arg Asp Arg
120 20 25 30
121 tcc gac cag cac att cag ctg caa ctc tcg gcc gaa agc gtt gga gag 265
122 Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu Ser Val Gly Glu
123 35 40 45
124 gtc tat atc aag tcg acg gag act ggc cag tac ctt gcc atg gac acc 313
125 Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu Ala Met Asp Thr
126 50 55 60
127 gat ggg ctt ctg tat ggc tca cag acg cct aac gaa gaa tgc ttg ttt 361
128 Asp Gly Leu Leu Tyr Ser Gln Thr Pro Asn Glu Glu Cys Leu Phe
129 65 70 75 80
130 cta gaa aga cta gaa gaa aac cat tac aac acg tac ata tcg aaa aaa 409
131 Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr Ile Ser Lys Lys
132 85 90 95
133 cat gca gag aag aac tgg ttt gta ggc ctt aaa aaa aat ggt tcc tgt 457
134 His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys Asn Gly Ser Cys
135 100 105 110
136 aag cgt gga cca cgg act cac tat ggc caa aag gct atc ttg ttc ctg 505
137 Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala Ile Leu Phe Leu
138 115 120 125
139 cca cta cca gtg agc tcc gac taaggatccg aattcgagct ccgtcgacaa 556
140 Pro Leu Pro Val Ser Ser Asp
141 130 135
142 gcttgcggcc gcaactcgagc accaccacca ccaccactga gatccggctg ctaacaaagc 616
143 ccgaaaggaa gctg 630
145 <210> SEQ ID NO: 5
146 <211> LENGTH: 135
147 <212> TYPE: PRT
148 <213> ORGANISM: Homo sapiens
149 <220> FEATURE:
150 <223> OTHER INFORMATION: Translated protein sequence for the chemically

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:43

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

```

151      synthesized 134 amino acid form of fibroblast
152      growth factor
153 <400> SEQUENCE: 5
154      Met Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser Asn Gly Gly His
155          1          5          10          15
156      Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly Thr Arg Asp Arg
157          20          25          30
158      Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu Ser Val Gly Glu
159          35          40          45
160      Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu Ala Met Asp Thr
161          50          55          60
162      Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu Glu Cys Leu Phe
163          65          70          75          80
164      Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr Ile Ser Lys Lys
165          85          90          95
166      His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys Asn Gly Ser Cys
167          100         105         110
168      Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala Ile Leu Phe Leu
169          115         120         125
170      Pro Leu Pro Val Ser Ser Asp
171          130         135
173 <210> SEQ ID NO: 6
174 <211> LENGTH: 630
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
177 <220> FEATURE:
178 <223> OTHER INFORMATION: This sequence is a chemically synthesized sequence
179      encoding a 140 amino acid form of fibroblast
180      growth factor with alterations for preferred codon
181      usage in E. coli
182 <221> NAME/KEY: CDS
183 <222> LOCATION: (122)...(544)
184 <400> SEQUENCE: 6
185      gcgtagagga tcgagatctc gatcccgcca aattaatacg actcactata ggggaattgt 60
186      gagcggataa caattcccct ctagaataaa ttttgtttaa cttaagaag gagatataca 120
187      t atg ttt aac ctt ccg ccc ggg aat tac aaa aaa ccc aag ctt ctt tac 169
188      Met Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr
189          1          5          10          15
190      tgc agt aac gga gga cac ttc ctg cga att ctg cca gat ggc aca gta 217
191      Cys Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val
192          20          25          30
193      gat ggg act cgc gat cgc tcc gac cag cac att cag ctg caa ctc tcg 265
194      Asp Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser
195          35          40          45
196      gcc gaa agc gtt gga gag gtc tat atc aag tcg acg gag act ggc cag 313
197      Ala Glu Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln
198          50          55          60
199      tac ctt gcc atg gac acc gat ggg ctt ctg tat ggc tca cag acg cct 361
200      Tyr Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:43

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

```

201      65      70      75      80
202 aac gaa gaa tgc ttg ttt cta gaa aga cta gaa gaa aac cat tac aac 409
203 Asn Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn
204      85      90      95
205 acg tac ata tcg aaa aaa cat gca gag aag aac tgg ttt gta ggc ctt 457
206 Thr Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu
207      100      105      110
208 aaa aaa aat ggt tcc tgt aag cgt gga cca cgg act cac tat ggc caa 505
209 Lys Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln
210      115      120      125
211 aag gct atc ttg ttc ctg cca cta cca gtg agc tcc gac taaggatccg 554
212 Lys Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
213      130      135      140
214 aattcgagct ccgtcgacaa gcttgcggcc gcaactcgagc accaccacca ccaccactga 614
215 gatccggctg ctaaca 630
217 <210> SEQ ID NO: 7
218 <211> LENGTH: 141
219 <212> TYPE: PRT
220 <213> ORGANISM: Homo sapiens
221 <220> FEATURE:
222 <223> OTHER INFORMATION: Translated protein sequence for the chemically
223 synthesized 140 amino acid form of fibroblast
224 growth factor
225 <400> SEQUENCE: 7
226 Met Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr
227 1 5 10 15
228 Cys Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val
229 20 25 30
230 Asp Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser
231 35 40 45
232 Ala Glu Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln
233 50 55 60
234 Tyr Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro
235 65 70 75 80
236 Asn Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn
237 85 90 95
238 Thr Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu
239 100 105 110
240 Lys Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln
241 115 120 125
242 Lys Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
243 130 135 140
245 <210> SEQ ID NO: 8
246 <211> LENGTH: 1822
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <221> NAME/KEY: TATA_signal
251 <222> LOCATION: (102)...(107)

```

VERIFICATION SUMMARY

DATE: 09/19/2001

PATENT APPLICATION: US/09/929,918

TIME: 08:59:44

Input Set : N:\Crf3\08162001\I929918.raw

Output Set: N:\CRF3\09192001\I929918.raw

OIPE

RAW SEQUENCE LISTING

DATE: 08/23/2001

PATENT APPLICATION: US/09/929,918

TIME: 17:32:41

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

4 <110> APPLICANT: Kordyum, Vitaliy A.

5 Chernykh, Svitlana I.

6 Slavchenko, Iryna Yu.

7 Vozianov, Oleksandr

Does Not Comply
Corrected Diskette Needed

9 <120> TITLE OF INVENTION: PHAGE-DEPENDENT SUPER PRODUCTION OF

See page

10 BIOLOGICALLY ACTIVE PROTEIN AND PEPTIDES

13 <130> FILE REFERENCE: PHAGE.006A

C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/929,918

C--> 15 <141> CURRENT FILING DATE: 2001-08-15

15 <150> PRIOR APPLICATION NUMBER: 09/318,288

Does Not Comply
Corrected Diskette Needed

16 <151> PRIOR FILING DATE: 1999-05-25

18 <160> NUMBER OF SEQ ID NOS: 11

20 <170> SOFTWARE: FastSEQ for Windows Version 4.0

22 <210> SEQ ID NO: 1

23 <211> LENGTH: 630

24 <212> TYPE: DNA

Does Not Comply
Corrected Diskette Needed

25 <213> ORGANISM: Artificial Sequence ✓

27 <220> FEATURE:

28 <223> OTHER INFORMATION: This sequence was chemically synthesized based ✓

29 upon the amino acid sequence of human acidic

30 fibroblast growth factor (155 amino acids) using

31 codons which are used in highly expressed proteins

W--> 32 from E. coli. *Errored*

34 <221> NAME/KEY: CDS

35 <222> LOCATION: (122)...(590)

37 <400> SEQUENCE: 1

38 gcgtagagga tcgagatctc gatcccgcca aattaatacg actcactata ggggaattgt 60

39 gagcggataa caattcccct ctgaaataa tttgttttaa ctttaagaag gagatataca 120

40 t atg gct gaa ggg gaa atc acc acc ttt aca gcg tta acg gag aaa ttt 169

41 Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe

42 1 5 10 15

44 aac ctt ccg ccc ggg aat tac aaa aaa ccc aag ctt ctt tac tgc agt 217

45 Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser

46 20 25 30

48 aac gga gga cac ttc ctg cga att ctg cca gat ggc aca gta gat ggg 265

49 Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly

50 35 40 45

52 act cgc gat cgc tcc gac cag cac att cag ctg caa ctc tcg gcc gaa 313

53 Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu

54 50 55 60

56 agc gtt gga gag gtc tat atc aag tcg acg gag act ggc cag tac ctt 361

57 Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu

58 65 70 75 80

60 gcc atg gac acc gat ggg ctt ctg tat ggc tca cag acg cct aac gaa 409

61 Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu

62 85 90 95

64 gaa tgc ttg ttt cta gaa aga cta gaa gaa aac cat tac aac acg tac 457

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/929,918

DATE: 08/23/2001

TIME: 17:32:41

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

```

65 Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
66          100          105          110
68 ata tcg aaa aaa cat gca gag aag aac tgg ttt gta ggc ctt aaa aaa 505
69 Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys
70          115          120          125
72 aat ggt tcc tgt aag cgt gga cca cgg act cac tat ggc caa aag gct 553
73 Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala
74          130          135          140
76 atc ttg ttc ctg cca cta cca gtg agc tcc gac taa g gatccgaatt 600
77 Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp *
78 145          150          155
80 cgagctccgt cgacaagctt gcggccgcac 630
82 <210> SEQ ID NO: 2
83 <211> LENGTH: 155
84 <212> TYPE: PRT
85 <213> ORGANISM: Homo sapiens
87 <400> SEQUENCE: 2
88 Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe
89 1          5          10          15
90 Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser
91          20          25          30
92 Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly
93          35          40          45
94 Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu
95          50          55          60
96 Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu
97 65          70          75          80
98 Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
99          85          90          95
100 Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
101          100          105          110
102 Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys
103          115          120          125
104 Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala
105          130          135          140
106 Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
107 145          150          155
110 <210> SEQ ID NO: 3
111 <211> LENGTH: 468
112 <212> TYPE: DNA
113 <213> ORGANISM: Homo sapiens
115 <400> SEQUENCE: 3
116 atggctgaag gggaaatcac caccttcaca gccctgaccg agaagtttaa tctgcctcca 60
117 ggggaattaca agaagcccaa actcctctac tgtagcaacg ggggccactt cctgaggatc 120
118 cttccggatg gcacagtga tgggacaagg gacaggagcg accagcacat tcagctgcag 180
119 ctcaagtgcg aaagcgtggg ggaggtgtat ataaagagta ccgagactgg ccagtacttg 240
120 gccatggaca ccgacgggct ttatatacggc tcacagacac caaatgagga atgtttgttc 300
121 ctggaaaggc tggaggagaa ccattacaac acctatatat ccaagaagca tgcagagaag 360
122 aattggtttg ttggcctcaa gaagaatggg agctgcaaac gcggtcctcg gactcactat 420

```

RAW SEQUENCE LISTING

DATE: 08/23/2001

PATENT APPLICATION: US/09/929,918

TIME: 17:32:41

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

```

123 ggccagaaag caatcttggt tctccccctg ccagttcttt ctgattaa          468
125 <210> SEQ ID NO: 4
126 <211> LENGTH: 630
127 <212> TYPE: DNA
128 <213> ORGANISM: Artificial Sequence ✓
130 <220> FEATURE:
131 <223> OTHER INFORMATION: This sequence is a chemically synthesized sequence ✓
132     encoding a 134 amino acid form of fibroblast
133     growth factor with alterations for preferred codon
134     usage in E. coli
136 <221> NAME/KEY: CDS
137 <222> LOCATION: (122)...(526)
139 <400> SEQUENCE: 4
140 gcgtagagga tcgagatctc gatcccgoga aattaatacg actcactata ggggaattgt 60
141 gagcggataa caattcccct ctagaataaa ttttgtttaa cttaagaag gagatataca 120
142 t atg aat tac aaa aaa ccc aag ctt ctt tac tgc agt aac gga gga cac 169
143   Met Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser Asn Gly Gly His
144   1         5         10        15
146 ttc ctg cga att ctg cca gat ggc aca gta gat ggg act cgc gat cgc 217
147 Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly Thr Arg Asp Arg
148       20         25         30
150 tcc gac cag cac att cag ctg caa ctc tcg gcc gaa agc gtt gga gag 265
151 Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu Ser Val Gly Glu
152       35         40         45
154 gtc tat atc aag tcg acg gag act ggc cag tac ctt gcc atg gac acc 313
155 Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu Ala Met Asp Thr
156       50         55         60
158 gat ggg ctt ctg tat ggc tca cag acg cct aac gaa gaa tgc ttg ttt 361
159 Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu Glu Cys Leu Phe
160 65         70         75         80
162 cta gaa aga cta gaa gaa aac cat tac aac acg tac ata tcg aaa aaa 409
163 Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr Ile Ser Lys Lys
164       85         90         95
166 cat gca gag aag aac tgg ttt gta ggc ctt aaa aaa aat ggt tcc tgt 457
167 His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys Asn Gly Ser Cys
168      100        105        110
170 aag cgt gga cca cgg act cac tat ggc caa aag gct atc ttg ttc ctg 505
171 Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala Ile Leu Phe Leu
172      115        120        125
174 cca cta cca gtg agc tcc gac taaggatccg aattcgagct ccgtcgacaa 556
175 Pro Leu Pro Val Ser Ser Asp
176      130        135
178 gcttgcgggc gcaactcgagc accaccacca ccaccactga gatccggctg ctaacaaagc 616
179 ccgaaaggaa gctg          630
181 <210> SEQ ID NO: 5
182 <211> LENGTH: 135
183 <212> TYPE: PRT
184 <213> ORGANISM: Homo sapiens
186 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 08/23/2001

PATENT APPLICATION: US/09/929,918

TIME: 17:32:41

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

187 <223> OTHER INFORMATION: Translated protein sequence for the chemically
 188 synthesized 134 amino acid form of fibroblast
 189 growth factor

191 <400> SEQUENCE: 5

192 Met Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser Asn Gly Gly His
 193 1 5 10 15
 194 Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly Thr Arg Asp Arg
 195 20 25 30
 196 Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu Ser Val Gly Glu
 197 35 40 45
 198 Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu Ala Met Asp Thr
 199 50 55 60
 200 Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu Glu Cys Leu Phe
 201 65 70 75 80
 202 Leu Glu Arg Leu Glu Asn His Tyr Asn Thr Tyr Ile Ser Lys Lys
 203 85 90 95
 204 His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys Asn Gly Ser Cys
 205 100 105 110
 206 Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala Ile Leu Phe Leu
 207 115 120 125
 208 Pro Leu Pro Val Ser Ser Asp
 209 130 135

212 <210> SEQ ID NO: 6

213 <211> LENGTH: 630

214 <212> TYPE: DNA

215 <213> ORGANISM: Artificial Sequence ✓

217 <220> FEATURE:

218 <223> OTHER INFORMATION: This sequence is a chemically synthesized sequence ✓

219 encoding a 140 amino acid form of fibroblast

220 growth factor with alterations for preferred codon

221 usage in E. coli

223 <221> NAME/KEY: CDS

224 <222> LOCATION: (122)...(544)

226 <400> SEQUENCE: 6

227 gcgtagagga tcgagatctc gatccgcgca aattaatacg actcactata ggggaattgt 60
 228 gagcggataa caattcccct ctagaaataa ttttgtttta ctttaagaag gagatataca 120
 229 t atg ttt aac ctt ccg ccc ggg aat tac aaa aaa ccc aag ctt ctt tac 169
 230 Met Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr
 231 1 5 10 15
 233 tgc agt aac gga gga cac ttc ctg cga att ctg cca gat ggc aca gta 217
 234 Cys Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val
 235 20 25 30
 237 gat ggg act cgc gat cgc tcc gac cag cac att cag ctg caa ctc tcg 265
 238 Asp Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser
 239 35 40 45
 241 gcc gaa agc gtt gga gag gtc tat atc aag tcg acg gag act ggc cag 313
 242 Ala Glu Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln
 243 50 55 60
 245 tac ctt gcc atg gac acc gat ggg ctt ctg tat ggc tca cag acg cct 361

RAW SEQUENCE LISTING

DATE: 08/23/2001

PATENT APPLICATION: US/09/929,918

TIME: 17:32:41

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

```

246 Tyr Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro
247 65 70 75 80
249 aac gaa gaa tgc ttg ttt cta gaa aga cta gaa gaa aac cat tac aac 409
250 Asn Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn
251 85 90 95
253 acg tac ata tgc aaa aaa cat gca gag aag aac tgg ttt gta ggc ctt 457
254 Thr Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu
255 100 105 110
257 aaa aaa aat ggt tcc tgt aag cgt gga cca cgg act cac tat ggc caa 505
258 Lys Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln
259 115 120 125
261 aag gct atc ttg ttc ctg cca cta cca gtg agc tcc gac taaggatccg 554
262 Lys Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
263 130 135 140
265 aattcgagct ccgtcgacaa gcttgccggcc gcactcgagc accaccacca ccaccactga 614
266 gatccggtcg ctaaca 630
268 <210> SEQ ID NO: 7
269 <211> LENGTH: 141
270 <212> TYPE: PRT
271 <213> ORGANISM: Homo sapiens
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Translated protein sequence for the chemically
275 synthesized 140 amino acid form of fibroblast
276 growth factor
278 <400> SEQUENCE: 7
279 Met Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr
280 1 5 10 15
281 Cys Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val
282 20 25 30
283 Asp Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser
284 35 40 45
285 Ala Glu Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln
286 50 55 60
287 Tyr Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro
288 65 70 75 80
289 Asn Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn
290 85 90 95
291 Thr Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu
292 100 105 110
293 Lys Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln
294 115 120 125
295 Lys Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
296 130 135 140
299 <210> SEQ ID NO: 8
300 <211> LENGTH: 1822
301 <212> TYPE: DNA
302 <213> ORGANISM: Artificial Sequence
304 <220> FEATURE:
305 <221> NAME/KEY: TATA_signal

```

09/92, 918

60R7A

<220>

<223> This sequence was chemically synthesized based upon the amino acid sequence of human acidic fibroblast growth factor (155 amino acids) using codons which are used in highly expressed proteins from E. coli.

Sequence ID NO: 1 ~~MA~~

Errored: The Rules require that field 223 responses are no more than 4 lines.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/929,918

DATE: 08/23/2001

TIME: 17:32:42

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\08162001\I929918.raw

L:15 M:270 C: Current Application Number differs, Replaced Current Application No

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:32 M:259 W: Allowed number of lines exceeded, <223> Other Information:

in no more than 4 lines